INDEX

TO THE

MATHEMATICAL GAZETTE

No. 319, FEBRUARY 1953—No. 322, DECEMBER 1953.

1. Articles.
2. Mathematical Notes.
3. Reviews and Notices.
4. News of Branches.
5. Correspondence.
6. Gleanings Far and Near.
7. Miscellaneous.
8. Plates.

ARTICLES.

Author.	Title.	Page.
S. N. Afriat.	The rank and multiplicity theorem for the reduction of quadratic forms.	27
W. R. Andress & W. Saddler.	Perspective triads. (With a note by W. W. Sawyer.)	247
E. H. Bateman.	The solution of algebraic and transcendental equations by iteration.	96
J. E. Bowcock.	Mathematics in search of a soul.	7
J. H. Cadwell.	A property of linear cyclic transformations.	85
R. H. Cobb.	A symbolism for the geometry of the triangle.	174
M. F. Egan & R. E. Ingram.	On commutative matrices.	107
T. J. Fletcher.	Finite geometry by coordinate methods.	34
R. L. Goodstein.	Euclidean geometry and the rigid motion group.	117
C. V. Gregg.	Reciprocal nomograms.	90
L. Guggenbuhl.	Henri Brocard and the geometry of the triangle.	241
N. W. Honey.	Catenary graphs and their uses.	10
V. Inglada.	Pairs of related triangles studied by complex coordinates.	1
R. E. Ingram.	*See* M. F. Egan.	
G. Kreisel.	Note on functional relationship.	18
E. H. Lloyd.	The direct product of matrices.	29

Author.	Title.	Page.
E. H. Neville.	Involution.	199
C. C. Puckette.	The curve of pursuit.	256
E. M. Renwick.	The approach to Algebra.	111
M. Rumney.	Equations in polynomials.	261
W. Saddler.	*See* W. R. Andress.	
W. W. Sawyer.	*See* W. R. Andress.	
" Peter Simple ".	Rod, Pole and Perch.	102
K. S. Snell.	Presidential Address, 1953. School mathematics today and tomorrow.	161
S. J. Taylor.	Some simple geometrical extremal problems.	188
V. Thébault.	Sur le quadrilatère convexe inscriptible.	14
G. N. Watson.	Two inequalities.	244
R. Weitzenböck.	Some remarks on equilateral triangles and squares.	21
E. M. Wright.	The calculation of large primes.	104
Annual General Meeting, 1953.		81
Report of the Council for 1952.		82

MATHEMATICAL NOTES.

Author.	No.	Title.	Page.
A. C. Aitken.	2336	A special determinant.	122
A. J. L. Avery.	2329	A note on mensuration.	58
R. Beetham.	2325	Some oblique angles are right angles.	51
J. E. Blamey.	2337	Proofs in elementary geometry.	122
A. D. Booth.	2358	On a result in the theory of plane curves.	265
F. A. Bostock.	2327	On the centre locus of a four-line system of conics.	54
G. W. Brewster.	2365	An old result in a new dress.	269
A. Buckley.	2360	Note on reverse numbers.	266
	2375	Instantaneous and zero-acceleration centres.	283
A. J. Carr	2359	The binomial theorem for any index.	266
F. Chorlton.	2363	Motion of a rocket.	268
B. Cohen.	2381	The binomial theorem for negative integers.	289
W. Craig.	2322	The half-angle formula.	49
	2323	The formula for $\tan \frac{1}{2}(B-C)$.	50
R. O. Davies	2317	Bending the beam.	40
M. P. Drazin	2328	A property of the triangle.	55
C. V. Durell	2330	A query.	58
H. G. Eggleston	2347	Isosceles triangles with integral sides and two integral medians.	208
R. C. Everitt.	2316	Menelaus' theorem.	40
H. G. Forder.	2344	On gauge constructions and a letter of Hjelmslev.	203
J. G. Freeman.	2378	An approximate construction for π.	285
H. J. Godwin.	2349	On Note 2045 : an algebraic identity.	211
F. M. Goldner	2362	The point of contact of the nine-points circle and incircle.	267
R. K. Guy.	2315	A single-scale nomogram.	39
H. W. Haskey.	2354	The deformed circular ring.	217
W. Hope-Jones.	2343	On even distribution of numbers.	203

Author.		Title.	Page
L. W. H. Hull.	2320	The value of a product whose factors are liable to error.	45
J. A. H. Hunter.	2364	On Note 2075: nearly-isosceles right-angled triangles.	269
E. de St. Q. Isaacson.	2369	The prime lattice.	273
I. FitzRoy Jones.	2382	Grid references.	289
G. Klein.	2353	Certain statistical kinematic identities.	217
J. Lang.	2324	Construction of a quadrangle.	50
C. D. Langford.	2361	Rate of work problems and the reciprocal nomogram.	267
D. F. Lawden.	2341	Single-valued series of multi-valued functions.	127
B. E. Lawrence.	2350	On Note 2045: an algebraic identity.	212
	2373	A rough census of prime numbers.	280
E. H. Lockwood.	2338	Simson's line and its envelope.	124
R. D. Lord.	2367	The ratio of two quadratics.	271
E. A. Maxwell.	2326	Every conic is degenerate.	53
E. J. Nestorides	2377	The computation of Fourier coefficients.	285
E. V. Newbery.	2342	The penny problem.	130
	2345	A lattice problem.	205
R. H. Peacock.	2318	Application of vector methods in three-dimensional statics.	41
	2321	Freak goals as an illustration of dynamical principles.	47
N. J. C. Peres.	2351	Pyramidal indentation of a sphere.	212
E. G. Phillips.	2374	On the equation $x^2 - cy^2 = z^2$.	280
H. T. H. Piaggio.	2331	A simplification of Bertrand's method for integrating a total differential equation.	59
G. Power.	2355	A dielectric cylinder.	220
	2371	An example from electricity.	278
E. J. F. Primrose.	2332	Theorems on concurrence and collinearity.	60
C. C. Puckette.	2339	On the approximation $\theta = \tan\theta$ when θ is small.	126
F. E. Relton.	2335	Differential equations by vector methods.	120
A. Robson.	2376	Pascal's theorem: for the collector of projective proofs.	284
A. S. C. Ross.	2334	The name of the game of Nim.	119
C. M. Segedin.	2379	Construction of cubic expressions.	286
	2380	Conormal points on an ellipse.	287
L. R. Shenton.	2352	Approximations to $\log_e\left(\frac{x+1}{x-1}\right)$	214
A. W. Siddons.	2366	The sundial.	270
A. K. Srinivasan.	2340	$\int_b^a x^m dx$: *ab initio* evaluation.	126
S. Suryanarayana Iyer.	2370	An invariant of two circles.	276
V. Thébault.	2372	Réciproque du théorème de Pythagore.	278
C. O. Tuckey.	2333	An enigma.	60
G. Tyson.	2368	A new quadrature of the circle.	273
S. Vajda.	2346	A simple kinematical application of the cycloid.	206
G. L. Watson.	2348	A simple proof that all large integers are sums of at most eight cubes.	209
R. S. Williamson.	2383	A formula for rational right-angled triangles.	289
T. J. Willmore.	2319	Note on a class of problems in elementary dynamics.	44

REVIEWS AND NOTICES.

AUTHOR.	TITLE.	REVIEWER.	PAGE.
N. Altshiller-Court.	College geometry.	*W. J. Hodgetts.*	314
M. Apte.	*See* A. B. Shah.		
H. D. Aten.	*See* M. F. Rosskopf.		
C. Attwood.	Advanced five-figure mathematical tables.	*G. A. Garreau.*	75
O. Becker & J. E. Hofmann.			
	Geschichte der Mathematik.	*R. C. H. Young.*	292
E. T. Bell.	Mathematics, queen and servant of science.	*T.A.A.B.*	71
	Men of mathematics. (Rep.)	*T.A.A.B.*	320
L. B. Benny.	Mathematics for students of technology. Junior Course (2).	*A. J. L. Avery.*	304
	Mathematics for students of technology. Senior course (3).	*T.A.A.B.*	305
A. R. Bielby.	A new geometry and trigonometry.	*F. J. Tongue.*	75
E. E. Biggs and H. E. Vidal.			
	Mathematics today. II.	*S. Inman.*	240
D. Black and R. A. Newing.			
	Committee decisions with complementary valuation.	*F. Sandon.*	133
G. Bouligand and J. Rivaud.			
	L'enseignement des mathématiques générales par les problèmes. I.	*R. Walker.*	149
B. C. Brookes.	Notes on the teaching of statistics in schools.	*F. Sandon.*	317
R. C. Brown.	Heat.	*J. Topping.*	147
H. Bückner.	Die praktische Behandlung von Integralgleichungen.	*F. Smithies.*	235
P. Burgatti.	Memorie scelte.	*V. C. A. Ferraro.*	65
P. F. Burns.	Daily life mathematics. I.	*S. Inman.*	239
C. Carathéodory.	Conformal representation (2).	*T.A.A.B.*	72
J. W. Cell.	Analytic geometry (2).	*J. Kershaw.*	230
J. Chance and G. F. Sims.			
	Basic mathematics of technology. II.	*S. Inman.*	236
L. Chattelun.	Calcul vectoriel. I.	*D. E. Rutherford.*	229
D. E. Christie.	Intermediate college mechanics.	*J. Williams.*	316
S. Cohn-Vossen.	*See* D. Hilbert.		
M. Coral.	*See* A. L. Nelson.		
L. Couffignal.	Les machines à penser.	*S. Gill.*	293
H. M. Cundy and A. P. Rollett.			
	Mathematical models.	*B. J. F. Dorrington.*	223
H. B. Curry.	Leçons de logique algébrique.	*R. L. Goodstein.*	76
	Outlines of a formalist philosophy of mathematics.	*R. L. Goodstein.*	78
T. G. Daffern.	Basic arithmetic. 1a, 1b.	*Y. B. Giuseppi.*	294
M. Davidson.	From atoms to stars (3).	*A. Hunter.*	131
W. J. Donaldson.	*See* A. Keith.		

Author.	Title.	Reviewer.	Page.
J. Doubourdieu.	Théorie mathématique du Risque dans les assurances de Répartition.	*H. Freeman.*	65
A. Durand.	Sur les cercles bitangentes à la parabole.	*E. J. F. Primrose.*	136
C. V. Durell.	Revision course in general mathematics.	*A. H. G. Palmer.*	227
K. Dürr.	The propositional logic of Boethius.	*R. L. Goodstein.*	80
J. H. Ebbutt.	Made to measure. I. II.	*Y. B. Giuseppi.*	294
	Shapes and sizes. III.	*Y. B. Giuseppi.*	135
T. Estermann.	Introduction to modern prime number theory.	*E. M. Wright.*	146
W. L. Ferrar.	Finite matrices.	*K. A. Hirsch.*	228
K. W. Folley.	*See* A. L. Nelson.		
T. Fort.	Calculus.	*C. G. Paradine.*	68
R. J. Fulford.	Higher certificate and intermediate tests in pure mathematics (3).	*T.A.A.B.*	67
R. P. Gillespie.	Partial differentiation.	*H. Kestelman.*	232
H. E. Grant.	Practical descriptive geometry.	*P. Shaw.*	316
S. L. Green.	Intermediate dynamics and statics.	*J. Williams.*	131
M. E. Grimshaw.	*See* H. L. Hamburger.		
W. H. Grinsted.	*See* D. F. Spooner.		
H. L. Hamburger and M. E. Grimshaw.			
	Linear transformations in n-dimensional vector space. An introduction to the theory of Hilbert space.	*J. L. B. Cooper.*	156
G. H. Hardy, J. E. Littlewood and G. Polya.			
	Inequalities (2).	*E. C. Titchmarsh.*	236
W. W. Hart and V. Schult.			
	Solid geometry.	*H. Martyn Cundy.*	231
D. R. Hartree.	Numerical analysis.	*C. W. Jones.*	309
H. Hasse.	Über der Klassenzahl Abelscher Zahlkörper.	*L. J. Mordell.*	310
F. Hausdorff.	Grundzüge der Mengenlehre (1, rep.).	*R. Cooper.*	234
J. Heinhold.	Theorie und Anwendung der Funktionen einer komplexen Veränderlichen.	*F. Bowman.*	151
H. Herrmann.	Übungen zur projektiven Geometrie.	*D. B. Scott.*	313
D. Hilbert and S. Cohn-Vossen.			
	Geometry and the imagination.	*E. A. Maxwell.*	295
W. V. D. Hodge and D. Pedoe.			
	Methods of algebraic geometry. II.	*E. C. Thompson.*	61
J. E. Hofmann.	*See* O. Becker.		
D. W. Holder.	*See* R. C. Pankhurst.		
H. E. Huntley.	Dimensional analysis.	*H. V. Lowry.*	304
W. Kaplan.	Advanced calculus.	*P. M. Hunt.*	300
A. Keith and W. J. Donaldson.			
	Elementary calculus.	*A. H. G. Palmer.*	227
C. E. Kemp.	Elementary integration.	*T.A.A.B.*	320
C. J. Keyser.	Collected works. II.	*T.A.A.B.*	291
G. T. Kneebone.	*See* J. G. Semple.		
H. Kober.	Dictionary of conformal representations.	*H. G. Eggleston.*	299

Author.	Title.	Reviewer.	Page.
J. J. de Kock and A. J. van Zyl.			
	Senior mathematics.	*K. S. Snell.*	72
L. J. Lacey.	Intermediate geometry.	*W. J. Hodgetts.*	74
C. G. Lambe.	Elements of statistics.	*F. Sandon.*	237
P. S. de Laplace.	A philosophic essay on probability. (Rep.)	*B. C. Brookes.*	148
L. E. Lefèvre.	A school arithmetic. I.	*F. J. Tongue.*	135
	A school arithmetic. II.	*F. J. Tongue.*	312
	Graded examples in arithmetic and trigonometry.	*F. J. Tongue.*	295
W. Leighton.	An introduction to the theory of differential equations.	*C. G. Paradine.*	316
H. C. Levinson.	The science of chance.	*B. C. Brookes.*	301
J. E. Littlewood.	*See* G. H. Hardy.		
L. Locher-Ernst.	Einführung in die freie Geometrie ebener Kurven.	*E. J. F. Primrose.*	149
W. Maak.	Differential- und Integralrechnung.	*R. Cooper.*	233
J. C. C. McKinsey.	Introduction to the theory of games.	*S. Vajda.*	314
R. H. Macmillan.	An introduction to the theory of control in mechanical engineering.	*B. M. Brown.*	154
E. A. Maxwell.	Elementary coordinate geometry.	*P. M. Hunt.*	300
K. O. May.	Elementary analysis.	*R. Walker.*	312
E. A. Milne.	Modern cosmology and the Christian idea of God.	*W. H. McCrea.*	137
C. Moller.	The theory of relativity.	*W. H. McCrea.*	152
J. B. Morgan.	*See* A. W. Siddons.		
M. J. Moroney.	Facts from figures.	*B. C. Brookes.*	132
J. Mounsey.	An introduction to statistical calculations.	*B. C. Brookes.*	317
B. Sz. Nagy.	*See* F. Riesz.		
S. Narayan.	Differential calculus (5).	*J. E. Blamey.*	306
	Analytic solid geometry (7)	*J. E. Blamey.*	306
A. L. Nelson, K. W. Folley and M. Coral.			
	Differential equations.	*C. G. Paradine.*	316
R. A. Newing.	*See* D. Black.		
M. H. A. Newman.	Elements of the topology of plane sets of points (2).	*F. Smithies.*	153
G. H. R. Newth.	*See* W. P. Workman.		
I. Newton.	Opticks (4, rep.).	*T.A.A.B.*	295
R. Oldenburger.	Mathematical engineering analysis.	*D. A. Jobson.*	70
R. C. Pankhurst and D. W. Holder.			
	Wind-tunnel technique.	*D. A. Jobson.*	319
P. Pasquier.	Initiation à l'étude du ciel.	*A. Hunter.*	132
A. E. Peatfield.	Workshop practice.	*D. I. Robson.*	306
D. Pedoe.	*See* W. V. D. Hodge.		
J. Pedoe.	Advanced national certificate mathematics.	*C. G. Paradine.*	69
S. Perlis.	Theory of matrices.	*G. E. Wall.*	310
H. Poincaré.	Science and hypothesis (Rep.).	*T.A.A.B.*	295
	Science and method (Rep.).	*T.A.A.B.*	295
G. Polya.	*See* G. H. Hardy.		

Author.	Title.	Reviewer.	Page.
L. S. Pontryagin.	Foundations of combinatorial topology.	*P. J. Hilton.*	311
M. H. Quenouille.	Associated measurements.	*F. Sandon.*	319
W. van O. Quine.	Mathematical logic.	*R. L. Goodstein.*	139
G. P. Rawlings.	The calculus.	*A. H. G. Palmer.*	147
W. D. Reeve.	*See* M. F. Rosskopf.		
B. C. Rennie.	The theory of lattices.	*D. E. Rutherford.*	311
F. Riesz and B. Sz. Nagy.			
	Leçons d'Analyse fonctionnelle.	*J. L. B. Cooper.*	157
J. Rivaud.	*See* G. Bouligand.		
A. Robinson.	On the metamathematics of algebra.	*R. L. Goodstein.*	224
A. P. Rollett.	*See* H. M. Cundy.		
A. C. Rosander.	Elementary principles of statistics.	*F. Sandon.*	237
J. B. Rosser and A. R. Turquette.			
	Many-valued logics.	*R. L. Goodstein.*	296
M. F. Rosskopf, W. D. Reeve and H. D. Aten.			
	Mathematics. A second course.	*S. Inman.*	302
M. Roy.	Mécanique des milieux continus et déformables.	*I. N. Sneddon.*	62
O. Schreier and E. Sperner.			
	Introduction to modern algebra and matrix theory.	*K. A. Hirsch.*	228
V. Schult.	*See* W. W. Hart.		
J. G. Semple and G. T. Kneebone.			
	Algebraic projective geometry.	*J. A. Todd.*	151
B. Segre.	Arithmetical questions on algebraic varieties.	*L. J. Mordell.*	145
A. B. Shah and M. Apte.			
	Plane analytic geometry.	*J. Kershaw.*	73
A. W. Siddons, K. S. Snell and J. B. Morgan.			
	A new calculus. III.	*R. Walker.*	146
G. F. Sims.	*See* J. Chance.		
K. S. Snell.	*See* A. W. Siddons.		
E. Sperner.	*See* O. Schreier.		
D. F. Spooner and W. H. Grinsted.			
	Mathematics for telecommunications. I.	*F. Jeeps.*	305
D. J. Struik.	A concise history of mathematics (2).	*A. Prag.*	295
S. Suryanarayana Iyer.			
	Analytical geometry.	*W. J. Hodgetts.*	74
K. B. Swaine.	Exercises in elementary mathematics. IV.	*S. Inman.*	67
E. O. Tancock.	Starting astronomy.	*A. W. Siddons.*	131
G. B. Thomas.	Calculus and analytic geometry.	*P. M. Hunt.*	160
	The same ; (2).	*T.A.A.B.*	224
A. J. Thompson.	Logarithmetica Britannica. II.	*A. Fletcher.*	221
L. H. C. Tippett.	The methods of statistics (4).	*J. Wishart.*	301
E. W. Titt.	Linear differential equations, ordinary and partial. I.	*F. Underwood.*	143
J. Topping.	Plane trigonometry.	*F. J. Tongue.*	232
J. D. Tucker and D. Wilkinson.			
	Radio. I.	*F. W. Kellaway.*	239

AUTHOR.	TITLE.	REVIEWER.	PAGE.
A. R. Turquette.	*See* J. B. Rosser.		
G. Verriest.	Les nombres et les espaces.	*D. B. Scott.*	71
H. E. Vidal.	*See* E. E. Biggs.		
T. L. Wade.	The algebra of vectors and matrices.	*K. A. Hirsch.*	159
R. Walker.	Cartesian and projective geometry.	*W. J. Hodgetts.*	224
D. Wilkinson.	*See* J. D. Tucker.		
H. H. Winstanley.	Geometrical and mechanical drawing.	*F. T. Davies.*	70
W. P. Workman.	School arithmetic (4, revised by G. H. R. Newth).	*F. J. Tongue.*	67
G. H. von Wright.	An essay in modal logic.	*R. L. Goodstein*	226
A. J. van Zyl.	*See* J. J. de Kock.		
Applied statistics, Vol. I., No. 1.		*J. Wishart.*	135
Automatic and manual control.		*S. Vajda.*	158
British Association mathematical tables. X. Bessel functions. II : Functions of positive integer order.		*A. Fletcher.*	307
A short table for the Bessel functions $I_{n+\frac{1}{2}}(x)$, $(2/\pi)K_{n+\frac{1}{2}}(x)$.		*A. Fletcher.*	309
Contributions to the theory of games. Edited by H. W. Kuhn and A. W. Tucker.		*G. Clare.*	134
Dictionary of mathematical sciences. I. German-English. Edited by L. Herland.		*R. B. Harvey.*	136
Enzyklopädie der mathematischen Wissenschaften, I, 1, ii.		*R. L. Goodstein.*	80
The same, II, 1, i.		*R. L. Goodstein.*	298
" Godfrey and Siddons."		*T.A.A.B.*	160
50th Yearbook of the National Society for the study of education.			
I. The teaching of arithmetic.		*J. E. Blamey.*	307
II. Graduate study in education.		*T.A.A.B.*	147
Proceedings of the second Canadian Mathematical Congress.		*T.A.A.B.*	134
Semantics and the philosophy of language. Edited by L. Linsky.		*R. L. Goodstein.*	234
Smithsonian logarithmic tables to base e and base 10.		*A. Fletcher.*	291
Tables of the exponential function e^x (3).		*T.A.A.B.*	136
Translations from the philosophical writings of Gottlob Frege. By P. Geach and M. Black.		*R. L. Goodstein.*	141

NEWS OF BRANCHES.

	PAGE.		PAGE
Liverpool	i	North Staffordshire	ix
North-Eastern	ix	Queensland	xiii

CORRESPONDENCE.

		PAGE
C. V. Durell.	Euclidean geometry and the rigid motion group.	173
R. L. Goodstein.	Euclidean geometry and the rigid motion group.	173
A. S. Ramsey.	A triangle formula.	110
C. O. Tuckey.	An enigma.	110
J. L. Walsh.	The name of the game of Nim.	290

GLEANINGS FAR AND NEAR.

Page.	No.	Page.	No.	Page.	No.
17	1723–5	89	1740–1	198	1750
20	1726–9	95	1742	243	1751
26	1730–1	116	1743–4	246	1752
33	1732–4	118	1745	260	1753
38	1735	173	1746	290	1754
84	1736–9	187	1747–9		

MISCELLANEOUS

Annual Meeting, Sheffield 1953. 6
The Library. ix
The problem bureau. ix
Annual Meeting, 1954. xiii

PLATE

K. S. Snell. Facing 161